

**ABSTRACT OF THE DISCLOSURE**

Portable and wearable chemical detector devices, such as badges, that are analyte-general, rather than analyte-specific, and which provide an optimal way to notify and protect personnel against known and unknown airborne chemical hazards. The devices ~~of the present invention~~ are advantageously low-cost, have low-power requirements, may be wearable and are designed to detect and alarm to a general chemical threat. A sensor device ~~of the present invention in one embodiment~~ includes two or more sensor devices, a processing module coupled to each of the sensor devices and configured to process signals received from each of the two or more sensor devices to determine an environmental state; and a communication module that communicates information about the environmental state to a user.

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Portable and wearable chemical detector devices, such as badges, that are analyte-general, rather than analyte-specific, and which provide an optimal way to notify and protect personnel against known and unknown airborne chemical hazards. The devices are advantageously low-cost, have low-power requirements, may be wearable and are designed to detect and alarm to a general chemical threat. A sensor device includes two or more sensor devices, a processing module coupled to each of the sensor devices and configured to process signals received from each of the two or more sensor devices to determine an environmental state; and a communication module that communicates information about the environmental state to a user.